

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-IV • EXAMINATION – SUMMER • 2014****Subject Code: 143503****Date: 23-06-2014****Subject Name: Environment Bioscience****Time: 10:30 am - 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain all the characteristics of micro-organisms in detail. **07**
(b) Explain Whittaker classification and write a brief introduction of bacteria, algae, fungi, protozoa and viruses. **07**
- Q.2** (a) How are microbes grown and reproduced? Explain it in detail. **07**
(b) Explain the role of micro-organisms in environment. **07**
- OR**
- (b) What are carbohydrates? Give the classification of carbohydrates and explain it along with examples. **07**
- Q.3** (a) What are proteins? What are types of proteins and explain the classification of proteins along with the classification. **07**
(b) What are lipids? Write it's classification and function of lipids? **07**
- OR**
- Q.3** (a) What are fatty acids? Explain saturated and unsaturated fatty acids in detail. **07**
(b) What are enzymes and explain the properties of enzymes and factors affecting enzyme activity. **07**
- Q.4** (a) Explain the process of transcription in prokaryotes with diagram. **07**
(b) What are mutations? Explain point and frameshift mutations along with consequences. **07**
- OR**
- Q.4** (a) What do you mean by biotechnology and write about it's applications in detail? **07**
(b) Explain recombinant DNA, what are plasmids and how will you cut and join DNA molecule. **07**
- Q.5** (a) What is bioremediation; explain it along with the role of micro-organisms in bioremediation. **07**
(b) Write a short note on biogas. **07**
- OR**
- Q.5** (a) Explain Fischer's template theory of enzymes and explain three types of enzyme regulation and inhibition. **07**
(b) Write a short note on biosynthesis of DNA. **07**
